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10/826,310	04/19/2004	Yong Sung Ham	8734.025 C1	9810

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EXAMINER	
LIANG, REGINA	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/826,310	HAM, YONG SUNG	
	Examiner	Art Unit	
	Regina Liang	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5-8,15-18,20 and 21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 2, 5-8, 15-18, 20, 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1, 2, 5-8, 15-18, 20 21 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 6,788,280. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are obvious over each other.

The following is an example for comparing claim 7 of this application and claim 4 of U.S. Patent No. 6,788,280.

Claim 7 of this application	claim 4 of U.S. Patent No. 6,788,280
An apparatus for driving a liquid crystal display, comprising:	An apparatus for driving, a liquid crystal display, comprising:
a modulator that receives and registers first source data for a first frame period, receives second source data for a second frame period subsequent to the first frame period, the second frame period having a predetermined duration, and that generates modulated data according to a comparison result between the registered first source data and the second source data;	a modulator modulating source data using registered data previously provided therein; and wherein the modulator selects the registered data through a comparison of entire bits of the current and delayed source data,
and a data provider alternatively applying the modulated data and data different from the modulated data to the liquid crystal panel during an output period having the predetermined duration within the one frame period.	a data provider alternatively applying the modulated data and data different from the modulated data to the liquid crystal panel within one frame period.

As can be seen above, the patent claim 4 differs from claim 7 of this application in that the data source not having a first source data and a second source data. However, the patent claims are in comprising format and therefore covers structure not specifically recited. The

patent disclosure clearly describes the data source having a first source data and a second source data and are encompassed by the patent claims comprising format.

In view of the above analysis, applicant's claim 7 and patent claim 4 are not patentably distinct from one another and in the absence of a terminal disclaimer would result in an unjustifiable time wise extension of applicant patent.

Claim Rejections - 35 USC § 102

4. Claims 1, 2, 6-8, 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Ueno et al (US 6,320,562 hereinafter Ueno).

As to claim 1, Fig. 1 and 3 of Ueno discloses a method of driving a liquid crystal display (9), comprising: receiving and registering first source data for a first frame period; receiving second source data for a second frame period subsequent to the first frame period (Fig. 3, display data S510 corresponds to first source data, display data S401 corresponds to second source data, see col. 16, lines 25-31); generating modulated data (compensation data S501, Fig. 3) according to a comparison result between the registered first source data and the second source data; supplying the modulated data to a liquid crystal cell of a liquid crystal panel during an initial portion of an output period (see Fig. 5, Compensation processing period); and applying data different from the modulated data to the liquid crystal cell of the liquid crystal panel at a later portion of the output period than the initial portion (Predetermined horizontal scanning period).

As to claim 2, Ueno teaches the data applied to the LCD cell at the later portion of the output period is the source data (display data S401 is output to the display as a data signal S601, see col. 13, lines 40-43).

As to claim 6, Ueno teaches the first and second source data are not applied to the display cell while the modulated data are applied thereto (compensation data S501 is output to the display as a data signal S601, col. 13, lines 38-40).

As to claims 7, 18, note the discussion of claim 1 above. The selector circuit 6 in Fig. 1 of Ueno corresponds to the data provider alternatively applying the modulated data (compensation data S501) and data different from the modulated data (S401) to the display panel as claimed.

As to claim 8, Ueno teaches the data different form the modulated data is the second source data (S401).

As to claim 16, Fig. 1 of Ueno teaches a data driver (column drivers) applying the modulated data and the second source data received alternately from the data provider (selector circuit 6) to cells of the display panel through the plurality of data lines on the display panel and a scanning driver (row drivers) applying a scanning pulse to the plurality of scanning lines of the display panel.

As to claim 17, Fig. 5 of Ueno shows the scanning pulse has a frequency as claimed.

Claim Rejections - 35 USC § 103

5. Claims 5, 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno.

As to claim 5 and 20, Ueno does not disclose applying the modulated source data to the LCD panel for a first half frame period and the second source data to the LCD panel for a second half period. However, it would have been obvious to one having ordinary skill in the art at the

time the invention was made to modify Ueno to apply the source data as claimed, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

As to claim 15, Ueno teaches the data provider alternatively applying the modulated data (compensation data S501) and second source data (S401) to the display panel. Ueno does not disclose the data provider includes a delay circuit. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the data provider of Ueno to have a delay circuit for holding or delaying the second source data while the modulated data are applied to the display panel such that the second source data would be not lost.

6. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Johnson (WO 99/05567).

As to claim 21, Figs. 1 and 3 of Ueno discloses a method of driving a LCD, comprising: applying a modulated data signal (compensation data S501) to a LCD panel (9) within one frame period; applying a data signal (S401) within the one frame period, wherein the modulated data signal is generated according to a comparison result between data from a frame period previous to the one frame period and data from the one frame period (see Fig. 3 and col. 16, lines 25-34). Ueno does not explicitly disclose the modulated data signal has a voltage level larger than that of the data signal. However, Fig. 7 of Johnson teaches a display device for generating a modulated data signal. Table I in page 6 of Johnson teaches the modulated data signal has a voltage level larger than that of the data signal. Thus, it would have been obvious to one having ordinary skill

in the art at the time the invention was made to modify Ueno to have the modulated data signal which has a voltage level larger than that of the data signal as taught by Johnson so as to provide a high-speed driving method thereby rapidly reducing a response time of the liquid crystal (page 1, line 27 to page 2, line 1).

Response to Arguments

7. Applicant's arguments filed 10/22/07 have been fully considered but they are not persuasive.

Applicant's remarks regarding Ueno on pages 6-8 are not persuasive. Ueno teaches the display data S401 is received from frame memory 2 frame by frame; Fig. 2 of Ueno also shows the reading operation from the frame memory 2 is during one frame period. Col. 11, lines 3-6 of Ueno teaches "the driving circuit for applying the display data voltage and a compensation voltage based on the compensation data signal to one of the plurality of column electrodes during **one frame period**" (emphasis added) and col. 15, lines 66-67 of Ueno teaches "a plurality of compensation processing periods are provided in **one frame period**" (emphasis added). Even though the compensation circuit 5 compares the display data S401 and stored display data S510 for every one horizontal scanning period, the operation of the compensation circuit is operated during one frame period, and the compensation data and the display data S601 are selectively supplied to the column electrodes during one frame period. Therefore, Ueno discloses "receiving second source data for a second frame period subsequent to the first frame period; generating modulated data according to a comparison result between the registered first source data and the second source data" as claimed.

Applicant's argument regarding Ueno "during the time of application of the compensation voltage to the column electrodes, the selection pulses are not applied to transfer the compensation voltage to a liquid crystal cell" are not persuasive. Col. 13, lines 38-50 of Ueno clearly discloses "compensation data S501 is output to a corresponding one of the column drivers as a data signal S601 during a compensation processing period" and "compensation voltages corresponding to elements of compensation data S501 are applied across the column electrodes, respectively, after a horizontal scanning period passed therefrom", since the compensation data of Ueno is applied to column electrodes, hence the compensation data is applied to the cell irrespective of rather the cell is selected or not. Therefore, Ueno clearly discloses "supplying the modulated data to a liquid crystal cell of a liquid crystal panel during an initial portion of an output period" as claimed.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Regina Liang whose telephone number is (571) 272-7693. The examiner can normally be reached on Monday-Friday from 8AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Regina Liang
Primary Examiner
Art Unit 2674

11/30/07